



## The Internet of Things and Life/Living Benefits Insurance

### What is the Internet of Things (IoT)?

A high-level definition of the IoT is the digital interconnectivity of items that is achieved by incorporating electronic sensors into devices, which are connected to the Internet. The device could be as sophisticated as a jet engine, or as simple as an electric blanket. No matter how complex or simple the device may be, almost any can have sensors added to connect them to the Internet to both provide data, and eventually receive orders.

Many items exist today. For example, if you have the ability to control your home thermostat, lights and door locks from your phone, you're connected to the IoT. Wristwatches monitor your vital signs and transmit the data to your doctor. Telematic devices in your car monitor and report your driving habits. All of this is accomplished in real-time, with little, if any, effort on your part.

Today, it is possible to measure and communicate location, temperature, light, movement, vibration, and the presence of chemicals with other capabilities being developed.

Biometric data such as EKG and arrhythmia detection, pulse and variability, blood pressure, respiration information, blood sugar level, muscle activity, sleep patterns, body temperature, blood oxygen levels, skin conductance levels, brain activity, hydration levels, posture, eye tracking data, ingestion and fertility information can also be generated.

### How will the data be used?

Areas utilizing IoT data will include several levels of complexity such as:

1. Integrating sensors into everyday objects, connecting and then controlling them through the Internet.

2. Programs to control multiple devices simultaneously to achieve complex tasks.
3. Developing systems to achieve higher goals such as "smart" utility grids, traffic controls, and individualized healthcare.

From toothbrushes that track when, how often and how long you brush to help your dentist assess your dental hygiene, to a city wide sensor grid monitoring energy consumption patterns, IoT data can be analysed to improve all aspects of your life. However, IBM estimates that up to 90% of data generated today by connected devices is never acted on or analysed.<sup>1</sup>

### How can data be used in Life/Living Benefits?

Biometric data generated from IoT/wearable devices will be utilized throughout the Life/Living Benefits business process. This includes areas such as:

**Marketing** – approach preferred potential customers proactively through analysis of telematics and biometric data. This effectively changes the insurance sales paradigm 180 degrees. Carriers would no longer have to wait for an applicant to apply for coverage.

**Risk Assessment** – determine the risk class for underwriting. This offers a far superior customer experience than the 'old guard' of underwriting requirements (e.g., fluid testing, medical records, stress tests, etc.) Plus, these methods can take weeks if not months to obtain, are inconvenient to the customer, and cost inefficient to carriers when compared to other methods. Munich Re has done extensive research on the mortality impact of removing fluids from the underwriting process. We believe the mortality and morbidity increases caused by the removal of fluids in underwriting can be offset by the proper utilization and analysis of data.

**In Force Management** – analyse data to achieve retention of quality in-force business. Instead of letting profitable business lapse and be written with another carrier, renewal premium discounts offered to better risks could incentivize customers to stay with their current carrier. Similarly, rate increases for poorer risks could more accurately price the risk or encourage this business to be placed elsewhere.

A leading insurer in the U.S. recently launched a program to incorporate wearable device data into life insurance pricing. Insureds can qualify for rate discounts as well as discounts and rewards from retailers for taking steps to improve their health. A free Fitbit is provided to the new policy holder with the data generated used to determine rewards for the insured.

**Disability Income Claims Management** – managing claims in conjunction with medical professionals could result in faster recovery times by leveraging data obtained during through rehabilitation and exercise programs.

Telematic vehicular data also offers valuable information that is currently being leveraged in Property and Casualty lines of business (e.g., automobiles, motorcycles, boats, airplanes, etc.) This data can also be used for life/living benefits coverage not only for proactive marketing programs, risk assessment and accurate pricing, but also retention of quality business through data analysis generating premium incentive programs just as the aforementioned biometric data is leveraged.

The IoT will provide data that can more accurately assess risk through the entire insurance life cycle. From the initial marketing contact all the way through claims administration, IoT data will allow carriers to digitally automate, streamline, and better manage their business to reduce processing times and costs.

### Who owns the data? Who protects it?

A key question that needs to be addressed is, “Who owns the data?” Is it the device that emits it, the service provider that transmits the data, or the company that uses the data to improve customer service and provides new services to the consumer? Determining who owns the data will go a long way in determining who is responsible for data security and privacy issues.

In addition, as more and more devices become connected, the likelihood of a company using this data becoming a target of a cyberattack also rises. Companies are aware of this risk and are developing programs that would identify and prevent would-be attackers from

**It is estimated that up to 50 billion devices will be connected to the Internet by 2020. This equates to approximately six devices for every person in the world. Of course, connectivity comes with a cost. Leading companies are budgeting more than \$100 million annually developing IoT systems today. Companies as diverse as GE, IBM, Cisco, Samsung and Monsanto are currently investing billions into their IoT and analytics initiatives. Samsung alone is moving towards having their entire product line IoT-ready in the next five years.<sup>2</sup>**

being successful at the point of inception. The question of data privacy/security is a priority issue being actively researched and developed by the technology companies offering IoT/wearable devices.<sup>3</sup>

The legal parameters for utilizing IoT/wearable device data for life insurance purposes are being determined. Even so, major U.S. carriers are issuing life insurance policies today using individual consumer biometric data for risk assessment purposes. While we believe that the use of such data will eventually become commonly accepted, there is a good chance this data will initially be restricted or prevented from use for underwriting purposes in the U.S. The U.S. Fair Credit Reporting Act states that information must be verifiable and contestable in order for insurers to use it for risk assessment. The development of stringent consumer identification processes will be required for IoT data.

When regulators decide that the life insurance industry can use this data, public perception and adoption will be a determining factor on the level of success seen for any insurance program designed to utilize data.

### The Future of the IoT

Experts predict that the IoT will become so ubiquitous that the term will cease to exist just as ‘the Net’ and ‘World Wide Web’ have for the Internet. The systems will become ingrained into our everyday lives just as running water, and electricity did generations ago in the industrialized world.

Insurance executives sense that the velocity of change around IoT is faster than with previous paradigm shifts in our industry. The tried and proven method of gathering and analysing data before determining whether to proceed with an initiative may cause us to be too late to lead the initiative. Companies have already lost deals with start-up firms due to delayed decision making around IoT.<sup>4</sup> The threat of outside companies such as Google and Amazon seizing the opportunity before we do is real. Google Compare is generating automobile insurance quotes from multiple carriers for U.S. drivers today.

The Progressive Snapshot program is currently being used to determine the level of risk and pricing for automobile insurance in the US. Life and Living Benefits are the next lines of business to see disruption of the traditional paradigm.

It is our challenge to incorporate this opportunity into the life insurance industry and provide a better customer experience and value through it. As we say at Munich Re, "NOT IF, BUT HOW".

## References

<sup>1,2</sup>Oro, David. IoT Big Swings. IoT Central.com [Online] September 16, 2015. <http://www.iotcentral.io/blog/iot-big-swings>

<sup>3</sup>Dart, Andrew. The Case for Connected Wearables. January 2015. Asia Insurance Review

<sup>4</sup>Fitzgerald, Mike. Insurance IoT: You Can Sense the Disruption, [Online] September 18, 2015 <http://www.insurancenetworking.com/blogs/innovation/insurance-iot-you-can-sense-the-disruption-36405>



*Ron Schaber* *FALU,*  
*FLMI, ACS, AIAA, HIA*  
*Second Vice President,*  
*Integrated Underwriting*  
*Solutions, Munich Re,*  
*U.S. (Life)*

**"As GE transforms itself to become the world's premier digital industrial company, this will provide GE's customers with the best industrial solutions and the software needed to solve real world problems. It will make GE a digital show site and grow our software and analytics enterprise from \$6B in 2015 to a top 10 software company by 2020."**

**— Jeffrey R. Immelt, CEO, GE**